

DERWENT-ACC-NO: 1996-371768

DERWENT-WEEK: 199840

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TITLE: Wicket bas assembly for containing loaves of bread especially pre-cut - has inner and outer bags having mouth openable towards wicketable and non-mouthed end to allow only access by corresponding end of outer bag

INVENTOR: WILLIAMS, H T

PATENT-ASSIGNEE: BORDEN NZ LTD[BORD], AEP IND NZ LTD[AEPIN]

PRIORITY-DATA: 1995NZ-0270385 (January 24, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
NZ 270385 A	August 26, 1998	N/A	000	B65D 030/10
AU 9642135 A	August 1, 1996	N/A	000	B65B 025/18

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
NZ 270385A	N/A	1995NZ-0270385	January 24, 1995
AU 9642135A	N/A	1996AU-0042135	January 23, 1996

INT-CL (IPC): B65B025/18; B65D030/10 ; B65D033/16

ABSTRACTED-PUB-NO: AU 9642135A

BASIC-ABSTRACT: Inner and outer bags are provided where the inner bag has a mouth openable towards the wicketable end of the bag assembly so as to enable filling of the inner bag and a consequent and corresponding inflation of the outer bag on a wicket filling machine. The inner bag is openable at its non-mouthed end to allow access only when access is allowed by the corresponding end of the outer bag to that end of the inner bag.

The inner and outer bags have been formed from webs advanced to enable, prior to final heat seal and separation (or heat seal separation) forming of the discrete bag assemblies, one or more of heat sealing in the advance direction of a peripheral region of that web to provide at least part of the mouth of the inner bag to that web to provide the substantially corresponding region of the mouth of the outer bag. When each of the inner and outer bags is to be wicketable as the wicketable end of the bag assembly, heat sealing is in the advance direction a wicketable end region of the inner bag web to a wicketable end region of the outer bag web.

The method of producing involves heat sealing in the advanced direction part of the web of the inner or outer bag to the, or adjacent to the, wicketable end of the outer or inner bag. Then perforating in the advance direction that region of the inner bag web which is, at its end remote from the wicketable end of the assembly to provide for the customer opening of the inner bag. Then slitting or perforating in the advance direction the outer bag providing web, where a folded web is to enable the outer bag to be formed, so as to provide for customer access into that end of the outer bag not at the wicketable end of the bag assembly.

ADVANTAGE - Allows access to bread slices from either end of a precut loaf.

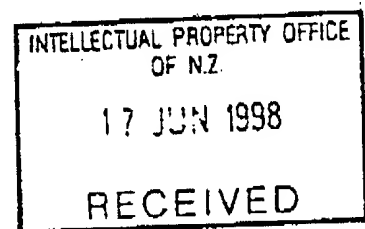
CHOSEN-DRAWING: Dwg.3/12

DERWENT-CLASS: Q31 Q32

270385

NEW ZEALAND
PATENTS ACT, 1953

No: 270385
Date: 24 January 1995



COMPLETE SPECIFICATION

"Multi Layer Dual Access Bread Bags and Methods of Manufacture Thereof"

We, AEP INDUSTRIES (NZ) LIMITED, a company duly incorporated under the laws of New Zealand of 100 Carbine Road, Mt Wellington, Auckland, New Zealand, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

The present invention relates to improvements in and/or relating to wicketable bags useful for containing a loaf of bread and particularly a precut loaf of bread.

In our New Zealand Registered Design No.25536 there is disclosed a bread package capable of being accessed from either end by means of a pony capable of being closed by a small winding of adhesive tape or a wire containing "twisty-tie" type member such as that made available to the public by us under the trade mark POLYTWIST™.

Our New Zealand Registered Design No.25535 also discloses a bag capable of being filled on a wicket to achieve the end shape shown in the aforementioned registered design. This particular form of wicketable bag employs a gusseted structure in the bag set in from the non-wicket end of the double open bag so as to provide for an ease of inflation of the topmost bag on the wicket so as to facilitate longitudinal loading (ie. normal to the bread slices) of a precut loaf of bread.

The present invention relates to an improved wicketable bag capable of allowing access to bread slices from either end of a precut packaged loaf, methods of making the same, wicketable stacks of such bags, methods of filling bags employing such stacks and/or bags, the packaged bread and related means and methods which will at least provide the public with a useful choice.

Accordingly in a first aspect the present invention consists in a wicketable bag assembly having a wicketable end, said assembly comprising

an inner bag, and

an outer bag,

wherein said inner bag has a mouth openable towards said wicketable end of the bag assembly so as to enable filling of the inner bag and a consequent and corresponding inflation of the outer bag on a wicket filling machine, said inner bag being openable at its non-mouthed end to allow access, only when access is allowed by the corresponding end of said outer bag, to that end of the inner bag.

Preferably said inner and outer bag are of webs of film material,

Preferably said corresponding end of said outer bag is beyond the non-mouthed (but openable) end of said inner bag.

Preferably a region of a web of said outer bag and an adjacent region of a web of

Preferably said wicketable end region of said inner bag and the wicketable end region of said outer bag are in part heat sealed together.

Alternatively a region of a web of said outer bag forms the wicketable end region of the wicketable end of said wicketable bag assembly.

Preferably said wicketable end region, the webs of said inner and outer bag are heat sealed together.

Preferably said mouth region of said inner bag is heat sealed to the adjacent web of said outer bag to provide a substantially corresponding region of the mouth of the outer bag.

Preferably said inner bag at its end remote of the wicketable end of said bag assembly is provided with a line of weakening.

Preferably said line of weakening are perforations extending at least in part in a direction lateral to the general mouthed to non-mouthed ends thereof.

Preferably said outer bag at the end remote from said wicketable end of said wicketable bag has a remote end mouth region.

Preferably said outer bag is formed from a single web of film material, folded to define at its fold the remote end of said outer bag from said wicketable end of said wicketable bag.

Preferably said remote end is provided with a line of weakening along or adjacent said fold to allow said remote end of said outer bag to be easily opened.

Preferably the bag assembly at its wicketable end is adapted to have a primary pony formed after filling and the outer bag which extends beyond the closed end (base) of the inner bag is open but is closable as a pony.

— ~~Preferably as hereinbefore described~~ with reference to any one or more of the accompanying drawings.

In a further aspects the present invention consists in a wicketable bag assembly of an inner bag having a wicketable end (or associated with a wicketable end of an outer bag) and an outer bag having a wicketable end (and/or associated with a wicketable end of the inner bag), wherein said inner bag is at least substantially laterally co-extensive with said

wicketable end of said outer bag is capable of being formed into a pony beyond the bottom of said inner bag.

Preferably said inner bag is perforated at its bottom.

Preferably with reference to any one or more of the accompanying drawings.

In still a further aspect the present invention consists in a bread package comprising, a loaf of pre-sliced bread, and

a bag assembly of any one of the preceding claims, said loaf being within the inner bag of said assembly and

wherein the assembly and/or outer bag is closed by a pony at each end.

Preferably the bread is sliced to have thicker slices at one end of the loaf than the other of said package.

In still a further aspect the present invention consists in a method of forming a wicketable bag assembly of a kind having an inner bag and an outer bag and a wicketable end, wherein said inner bag has a mouth openable towards said wicketable end of the bag assembly so as to enable filling of the inner bag and a consequent and corresponding inflation of the outer bag on a wicket filling machine, said inner bag being openable at its non-mouthed end to allow access only when access is allowed by the corresponding end of said outer bag to that end of the inner bag wherein said inner and outer bags have been formed from folded advanced webs subsequently to heat seal separation across said advanced direction, said method comprising

- i) heat sealing in the advance direction of a peripheral region of that web to provide at least part of the mouth of the inner bag to that web to provide the substantially corresponding region of the mouth of the outer bag,
- ii) heat sealing in the advance direction part of the web of said inner or outer bag to the, or adjacent to the, wicketable end of the outer or inner bag (as the case may be)
- iii) perforating in the advance direction that region of the inner bag web which is, at its end remote from the wicketable end of the assembly to provide for the customer opening of said inner bag, and
- iv) slitting or perforating in the advance direction the outer bag providing web,

wicketable end of said bag assembly

v) final heat seal and separation forming of the discrete bag assemblies.

Preferably said method further comprises

advancing at least two webs of an appropriate plastics film material, a first web to provide after heat seal separation lateral to the advance direction, said outer bag and a second web to provide said inner bag, wherein the web of the inner bags is longitudinally folded and is perforated to perforate what will be the base of said bottom of said inner bag,

locating and/or folding the outer web(s) to encompass the folded feed of the inner bag forming material,

associating the mouth of the inner bag web to that of the outer bag web to enable a wicketable opening, and loading of the inner bag in use,

(optionally at any time) providing the wicket holes in what will be individual bag assemblies,

optionally, slitting and/or perforating the secondary pony extremity of the outer bag forming folded ply, and

seal separating the feed to provide the discrete bags.

In even a further aspect the present invention consists in a bag assembly, a wicketable bag assembly comprising

an inner bag, and

an outer bag, each of said inner and outer bag having a mouth region, closed side regions and a bottom region, wherein along the mouth region and side region of the inner and outer bag, the inner and outer bag are heat sealed together and wherein the bottom of said inner bag is also closed but openable to allow access only when access is allowed by the corresponding end of said outer bag to the bottom of the inner bag.

Preferably said inner bag has a line of weakening running transverse to the general mouth to bottom direction.

Preferably said line of weakening are perforation.

Preferably said inner bag is formed from a single ply of film material folded such that the fold defines said bottom.

Preferably said outer bag is of a web of film material folded such that said fold

Preferably adjacent at least part of the mouth region of said inner and outer bag, there is a wicketable end region extending beyond said mouth region, said wicketable end region being of a film material having two spaced apertures through which wickets of a wicket filing machine may extend.

Preferably said wicketable end region is an extension of the web of at least one of the inner and/or outer bag.

To those skilled in the art to which the invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the scope of the invention as defined in the appended claims. The disclosures and the descriptions herein are purely illustrative and are not intended to be in any sense limiting.

The present invention will now be described with reference to the accompanying drawings in which

Figure 1 is a top view of a bag in accordance with the first embodiment;

Figure 2 is a sectional view of the bag of Figure 1 taken longitudinally, the vertical axis being exaggerated in order to show the method of construction;

Figure 3 is a perspective view of the arrangement depicted in Figures 1 and 2 but prior to the edge sealing of the various plies together to form the discrete bag, the embodiment of Figures 1 through 3 having a flat bag as the inner bag with the outer bag opened at a secondary pony tail end;

Figure 4 is a diagrammatic view showing a manufacturing process for bags of the kind referred to in Figures 1 through 3;

Figures 5, 6 and 7 are of a different embodiment to that shown in Figures 1 through 3 but corresponding thereto, Figures 5, 6 and 7 however showing an embodiment with the secondary pony tail (that of the outer bag) being closed with a perforation;

Figure 8 is a diagrammatic view showing a method of manufacture of a bag in accordance with Figures 5 through 7;

Figures 9, 10 and 11 show a third embodiment [again corresponds to Figures 1 through 3], but this time showing the inner bag with a bottom gusset, the outer bag of course being capable of being one or other of the forms previously described but in this

embodiment as in Figures 1 through 3 and

Figure 12 shows diagrammatically a method of manufacture of a bag of a kind as shown in Figures 9 through 11.

The embodiment of Figures 1 to 3 is of an inner bag (capable of lying flat) with a simple fold bottom end within an outer bag opened at both ends, the inner and outer bags being sealed together on their edges (normal both to the web advancement directions to the bottom fold of the inner bag) as a result of a heat seal separation during the manufacturing process as disclosed by reference to Figure 4. The inner and outer bags are additionally sealed at edges appropriate to assist the air inflation of the inner bag while the assembly is wicketed.

In Figures 1 through 3 the reference numerals denote the following -

- 1A - Top part of primary film
- 1B - Bottom part of primary film
- 2 - Secondary film
- 3 - Punched holes
- 4 - Main seal
- 5 - Top slit seal
- 6 - Bottom slit seal
- 7 - Perforation on secondary film [eg. 26 tooth wheel]

The preferred manufacturing process involves -

- 8 - primary reel - printed thermoplastics material (25mu),
- 9 - secondary reel - unprinted and plain thermoplastics material (20mu),
- 10 - perforation wheel
- 11 - "V" - forma
- 12 - Slit seal knives
- 13 - Trim taken by vacuum
- 14 - Slit knife
- 15 - Punches
- 16 - Main sealing bar

— sealed and heat sealed down each of the sides 18 during the

can inflate the inner bag within the outer bag so as to allow the passage of the bread (preferably a precut loaf ideally of slices of different thicknesses at each end can be passed into the bag and the pony tied off at the wicketed end.

In the embodiments of Figures 5 through 7 there is a perforated closure of the secondary pony tail -

- 19 - Primary film
- 20 - Secondary film
- 21 - Punched holes
- 22 - Main seal
- 23 - Top side seal
- 24 - Bottom side seal
- 25 - Perforation on secondary film
- 26 - Perforation on primary film

In the method of manufacture the apparatus shown and the procedure shown by reference to Figure 8 is very similar to that shown in Figure 4. The notable exception is the non presence of the slit knife 14 and the addition of a perforation wheel 27.

Figures 9 through 11 shows a third embodiment which is a variation of that of Figures 1 to 3 except that the bottom of the inner bag is of a gusseted structural form with a perforation 35.

- 28 - Top part of primary film
- 29 - Bottom part of primary film
- 30 - ~~Secondary film with bottom gusset~~
- 31 - Punched holes
- 32 - Main seal
- 33 - Top slit seal
- 34 - Bottom slit seal
- 35 - Perforation on secondary film

11 with its open secondary pony but its inwardly directed gusseted 30 with its perforations 35 of the inner bag (is the apparatus and procedure shown in Figure 12) where the main departure from the arrangement of Figure 4 is the provision of the gusset wheel 36.

WHAT WE CLAIM IS

1. A wicketable bag assembly having a wicketable end, said assembly comprising an inner bag, and an outer bag,

wherein said inner bag has a mouth openable towards said wicketable end of the bag assembly so as to enable filling of the inner bag and a consequent and corresponding inflation of the outer bag on a wicket filling machine, said inner bag being openable at its non-mouthed end to allow access, only when access is allowed by the corresponding end of said outer bag, to that end of the inner bag.

2. A wicketable bag assembly as claimed in claim 1 wherein said inner and outer bag are of webs of film material, wherein the sides of each of said inner and outer bag are heat sealed together.

3. A wicketable bag assembly as claimed in claims 1 or 2 wherein said corresponding end of said outer bag is beyond the non-mouthed (but openable) end of said inner bag.

4. A wicketable bag as claimed in any one of claims 1 to 3 wherein a region of a web of said outer bag and an adjacent region of a web of said inner bag form a wicketable end region of said wicketable end of said wicketable bag.

5. A wicketable bag as claimed in any one of claims 1 to 4 wherein said wicketable end region of said inner bag and the wicketable end region of said outer bag are in part heat sealed together.

6. A wicketable bag assembly as claimed in any one of claims 1 to 3 wherein a region of a web of said outer bag forms the wicketable end region of the wicketable end of said wicketable bag assembly.

7. A wicketable bag assembly as claimed in claim 6 wherein adjacent said wicketable end region, the webs of said inner and outer bag are heat sealed together.

8. A wicketable bag assembly as claimed in any one of claims 1 to 7 wherein said mouth region of said inner bag is heat sealed to the adjacent web of said outer bag to provide a substantially corresponding region of the mouth of the outer bag.

9. A wicketable bag assembly as claimed in any one of claims 1 to 8 wherein said mouth region of the wicketable end of said bag assembly is provided with

10. A wicketable bag assembly as claimed 9 wherein said line of weakening are perforations extending at least in part in a direction lateral to the general mouthed to non-mouthed ends thereof.

11. A wicketable bag assembly as claimed in any one of claims 1 to 10 wherein said outer bag at the end remote from said wicketable end of said wicketable bag has a remote end mouth region.

12. A wicketable bag assembly as claimed in any one of claims 1 to 10 wherein said outer bag is formed from a single web of film material, folded to define at its fold the remote end of said outer bag to said wicketable end of said wicketable bag.

13. A wicketable bag assembly as claimed in claim 12 wherein said remote end is provided with a line of weakening along or adjacent said fold to allow said remote end of said outer bag to be easily opened.

14. A wicketable bag assembly as claimed in any one of claims 1 to 13 where the bag assembly at its wicketable end is adapted to have a primary pony formed after filling and the outer bag which extends beyond the non-mouthed end of the inner bag is open but is closable as a pony.

15. A wicketable bag assembly as claimed in any one of claims 1 to 14 substantially as hereinbefore described with reference to any one or more of the accompanying drawings.

16. A wicketable bag assembly of an inner bag having a wicketable end (or associated with a wicketable end of an outer bag) and an outer bag having a wicketable end (and/or associated with a wicketable end of the inner bag), wherein said inner bag is at least substantially laterally co-extensive with said outer bag (preferably having been formed by heat sealed separation) and wherein the non wicketable end of said outer bag is capable of being formed into a pony beyond the bottom of said inner bag.

17. A wicketable bag assembly as claimed in claim 16 wherein said inner bag is perforated at its bottom.

18. A wicketable bag assembly of claim 16 or 17 substantially as hereinbefore described with reference to any one or more of the accompanying drawings.

19. A bread package comprising,
a loaf of pre-sliced bread, and

bag of said assembly and

wherein the assembly and/or outer bag is closed by a pony at each end.

20. A bread package of claim 19 wherein the bread is sliced to have thicker slices at one end of the loaf than the other of said package.

21. A method of forming a wicketable bag assembly of a kind having an inner bag and an outer bag and a wicketable end, wherein said inner bag has a mouth openable towards said wicketable end of the bag assembly so as to enable filling of the inner bag and a consequent and corresponding inflation of the outer bag on a wicket filling machine, said inner bag being openable at its non-mouthed end to allow access only when access is allowed by the corresponding end of said outer bag to that end of the inner bag wherein said inner and outer bags have been formed from folded advanced webs subsequently to heat seal separation across said advanced direction, said method comprising

- i) heat sealing in the advance direction of a peripheral region of that web to provide at least part of the mouth of the inner bag to that web to provide the substantially corresponding region of the mouth of the outer bag,
- ii) heat sealing in the advance direction part of the web of said inner or outer bag to the, or adjacent to the, wicketable end of the outer or inner bag (as the case may be)
- iii) perforating in the advance direction that region of the inner bag web which is, at its end remote from the wicketable end of the assembly to provide for the customer opening of said inner bag,
- iv) slitting or perforating in the advance direction the corresponding end of said outer bag providing web, so as to provide for customer access into that end of the outer bag not at the wicketable end of said bag assembly, and
- v) final heat seal and separation forming of the discrete bag assemblies substantially lateral to the advance direction.

22. A method of forming bags of any one of claims 1 to 15 which comprises

advancing at least two webs of an appropriate plastics film material, a first web to provide after heat seal separation lateral to the advance direction, said outer bag and a second web to provide said inner bag, wherein the web of the inner bags is longitudinally

locating and/or folding the outer web(s) to encompass the folded feed of the inner bag forming material,

associating the mouth of the inner bag web to that of the outer bag web to enable a wicketable opening, and loading of the inner bag in use,

(optionally at any time) providing the wicket holes in what will be individual bag assemblies,

optionally, slitting and/or perforating the secondary pony extremity of the outer bag forming folded ply, and

seal separating the feed to provide the discrete bags.

23. A method of claim 22 when performed substantially as hereinbefore described with reference to the accompanying drawings.

24. A wicketable bag assembly comprising
an inner bag, and

an outer bag, each of said inner and outer bag having in a lie-flat condition a mouth region, closed side regions and a bottom region, wherein along the mouth region (at least in part) and side regions of the inner and outer bag, the inner and outer bags are heat sealed together and wherein the bottom of said inner bag is also closed but openable to allow access only when access is allowed by the corresponding end of said outer bag to the bottom of the inner bag.

25. A bag assembly as claimed in claim 24 wherein the bottom of said inner bag has a line of weakening running transverse to the general mouth to bottom direction.

26. A bag assembly as claimed in claims 24 or 25 wherein said line of weakening are perforation.

27. A bag assembly as claimed in any one of claims 24 to 26 wherein said inner bag is formed from a single ply of film material folded such that the fold defines said bottom.

28. A bag assembly as claimed in any one of claims 24 to 27 wherein said outer bag is of a web of film material folded such that said fold defines the bottom of said outer bag.

29. A bag assembly as claimed in any one of claims 24 to 28 wherein adjacent at least part of the mouth region of said inner and outer bag, there is a wicketable end region extending beyond said mouth region, said wicketable end region being of a film material

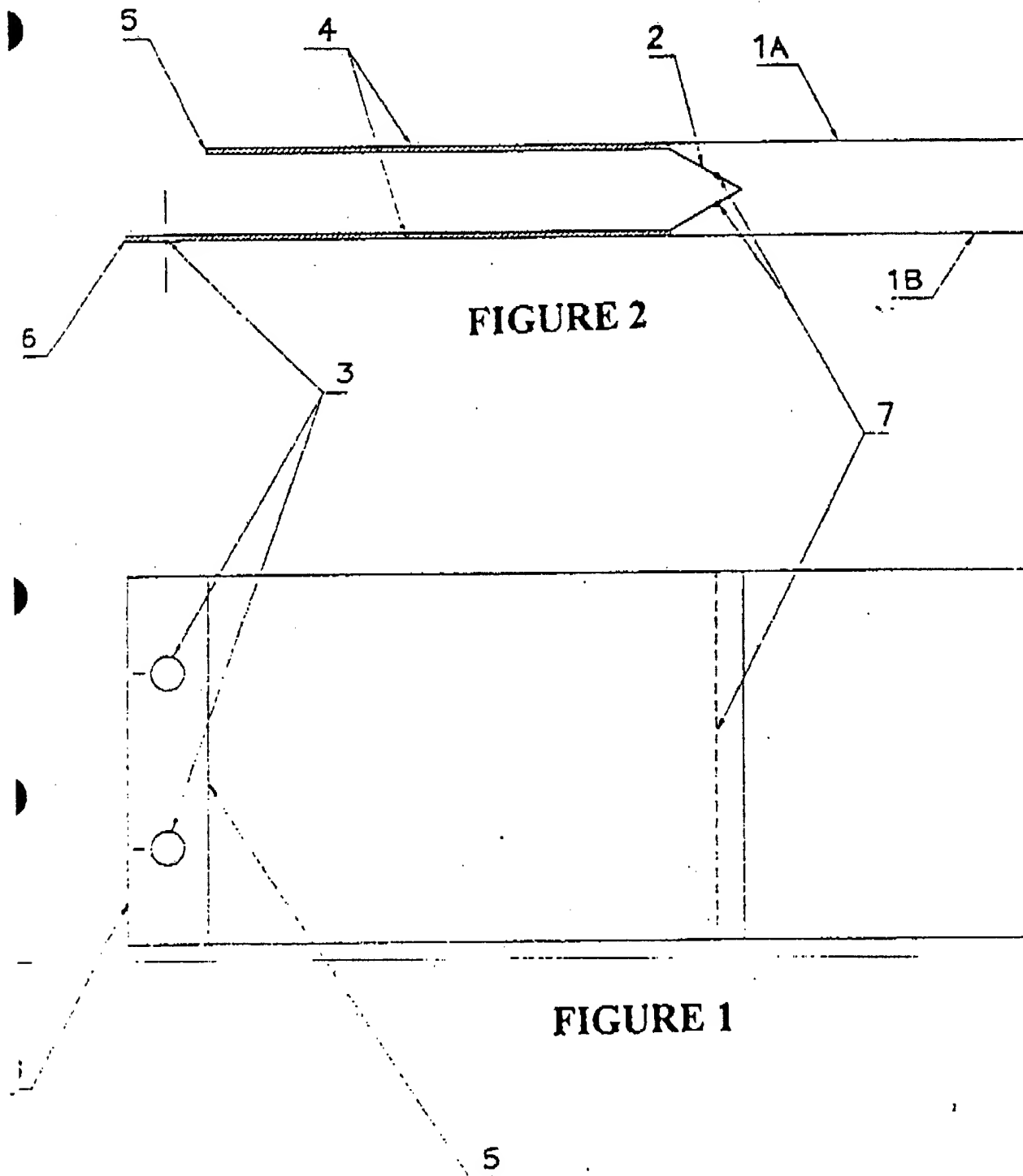
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extend.

30. A bag assembly as claimed in claim 29 wherein said wicketable end region is an extension of the web of at least one of the inner and/or outer bag.

DATED THIS 16th DAY OF June 1998
A.J. PARK & SON
PER *[Signature]*
AGENTS FOR THE APPLICANT



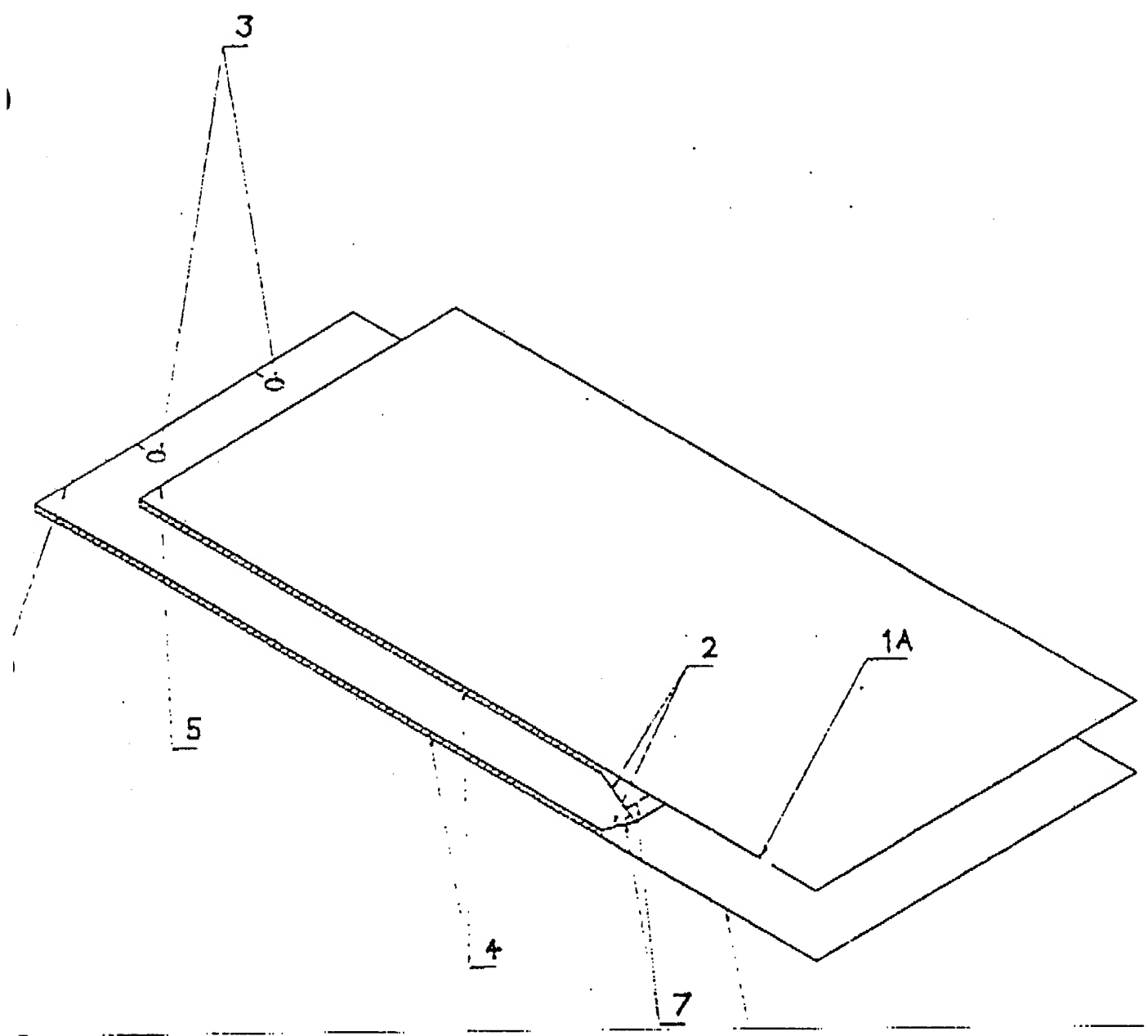


FIGURE 3

1B

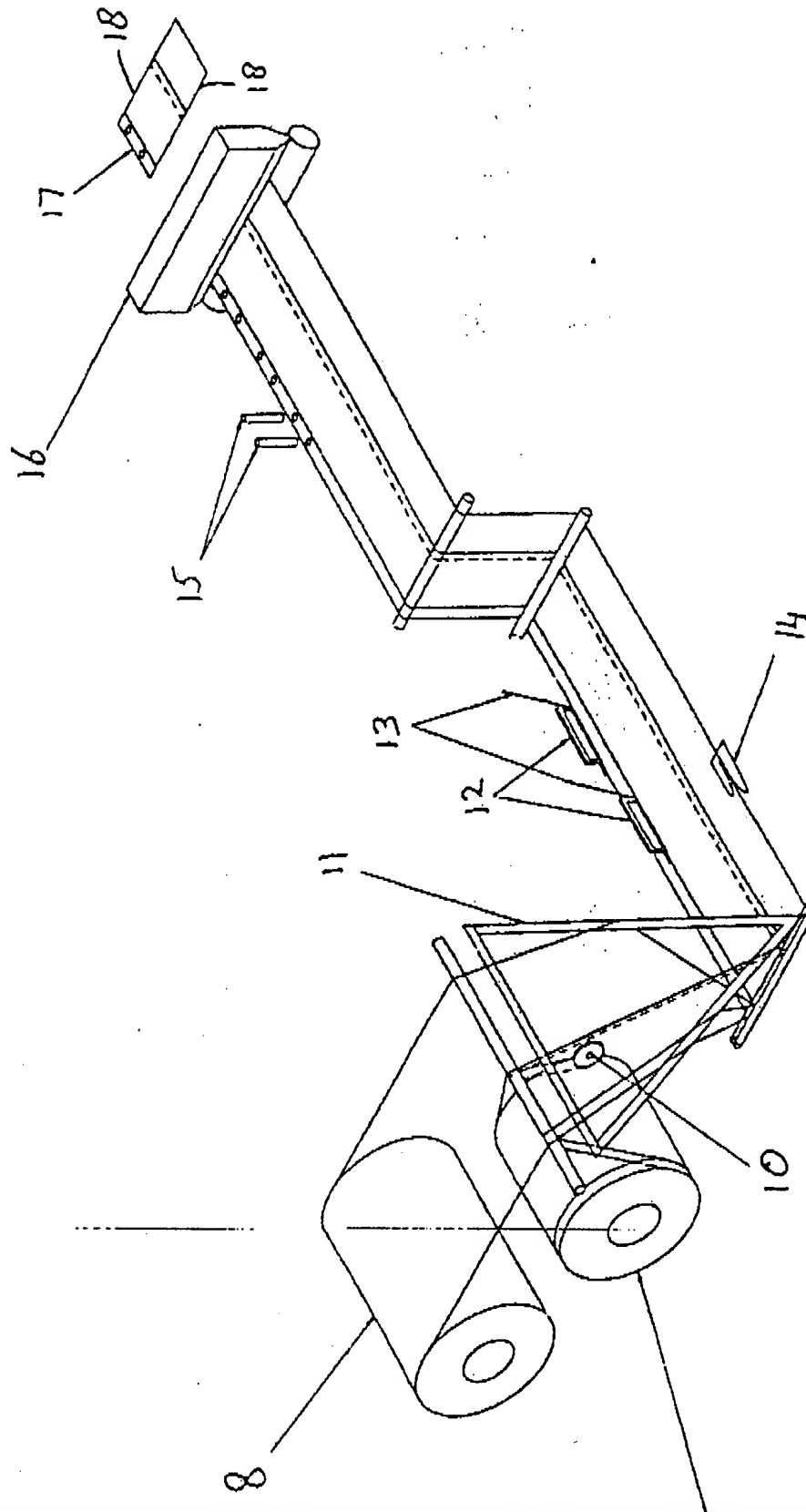
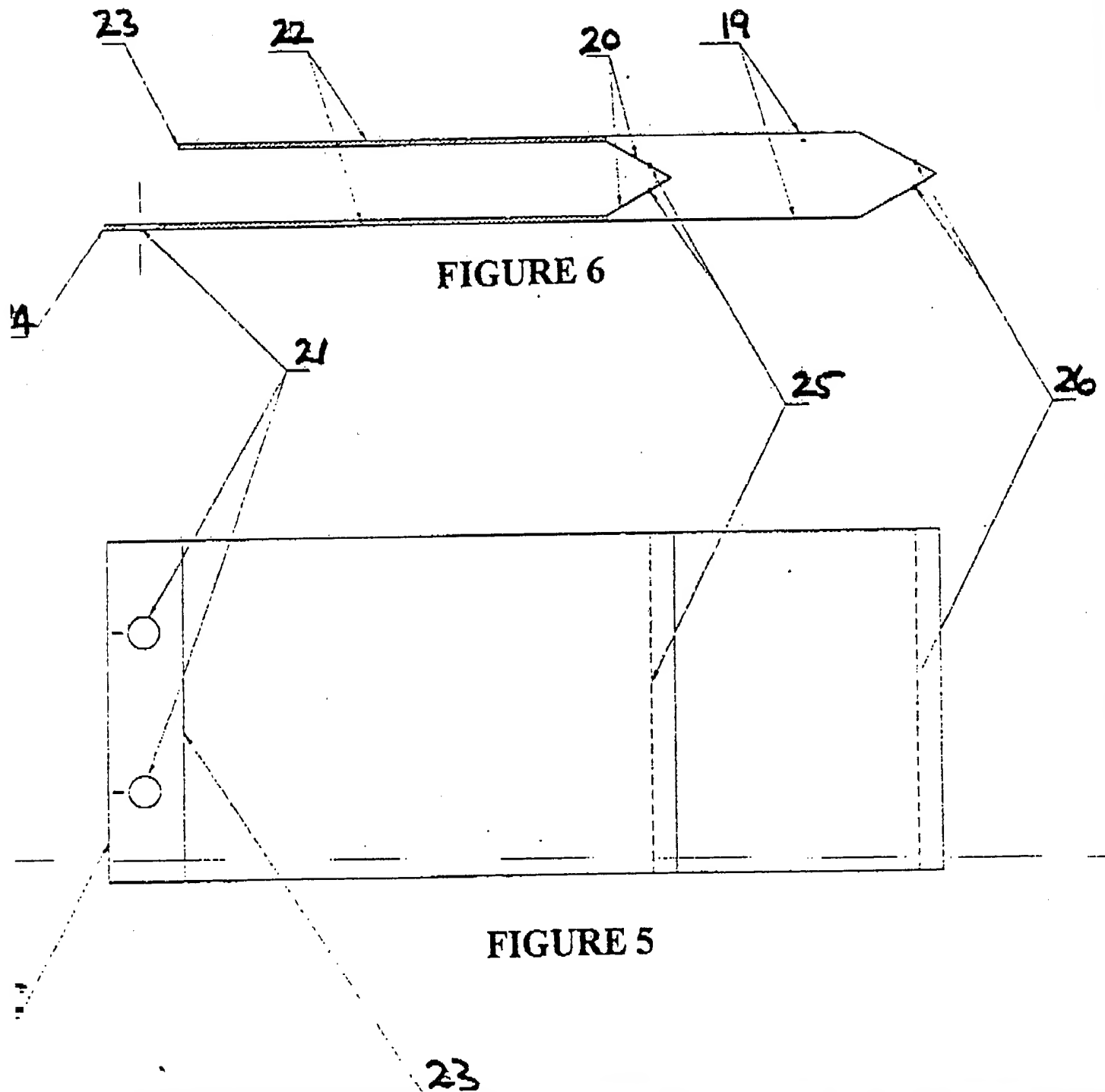


FIGURE 4



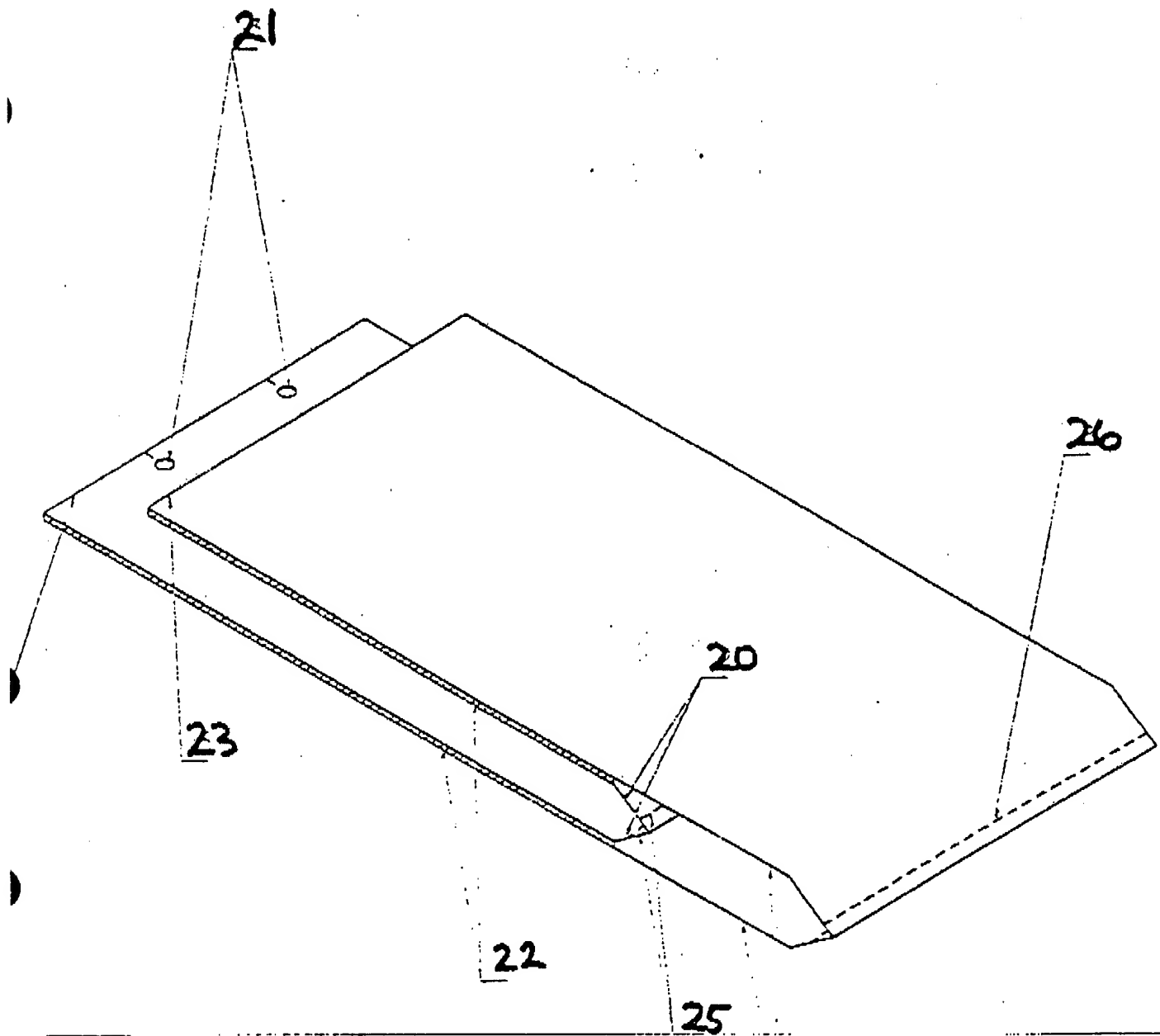


FIGURE 7

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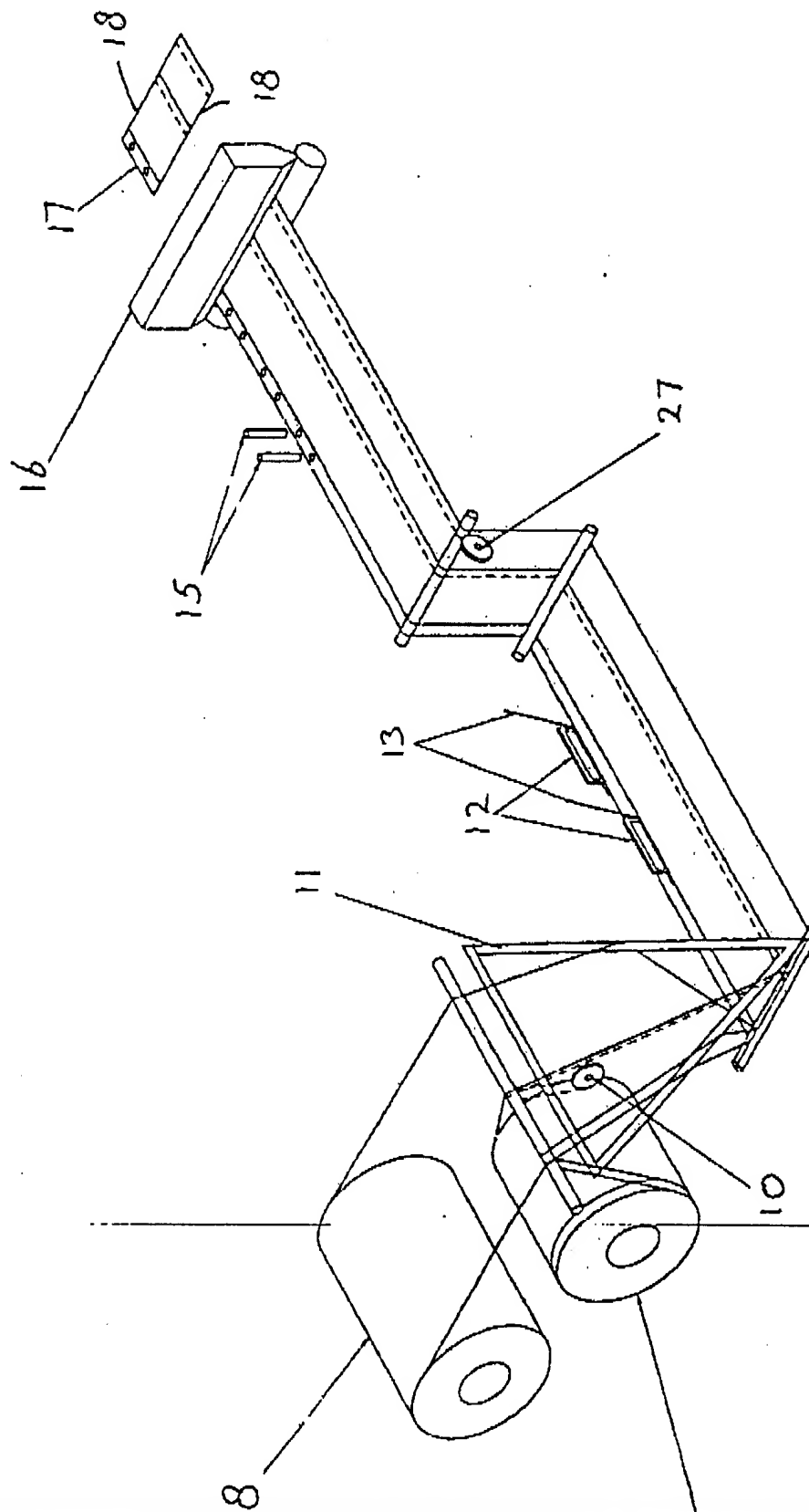


FIGURE 8

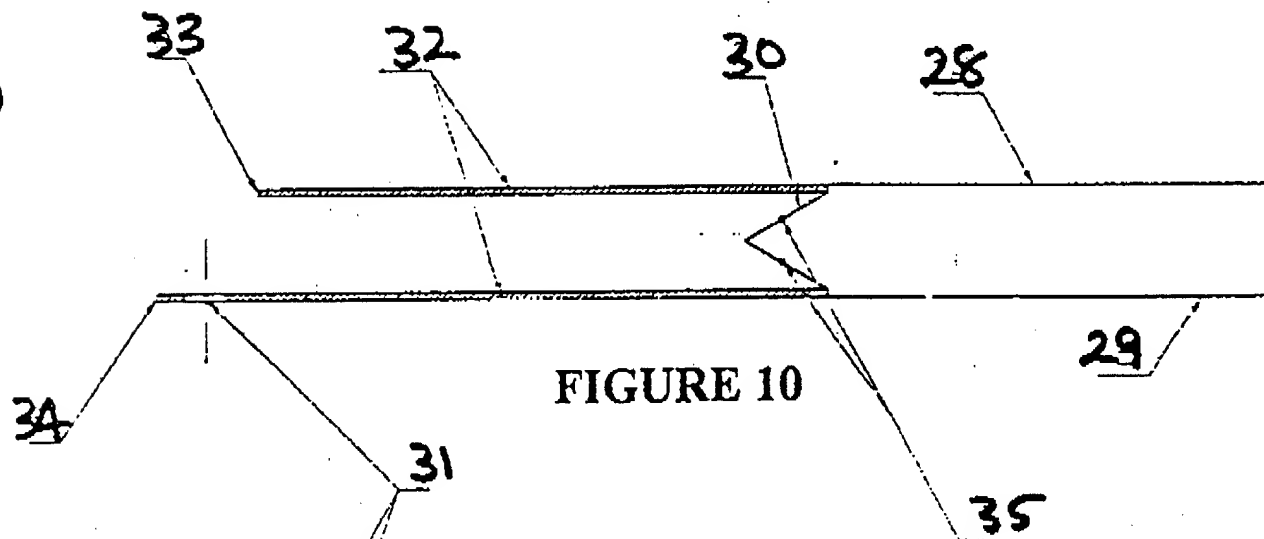


FIGURE 10

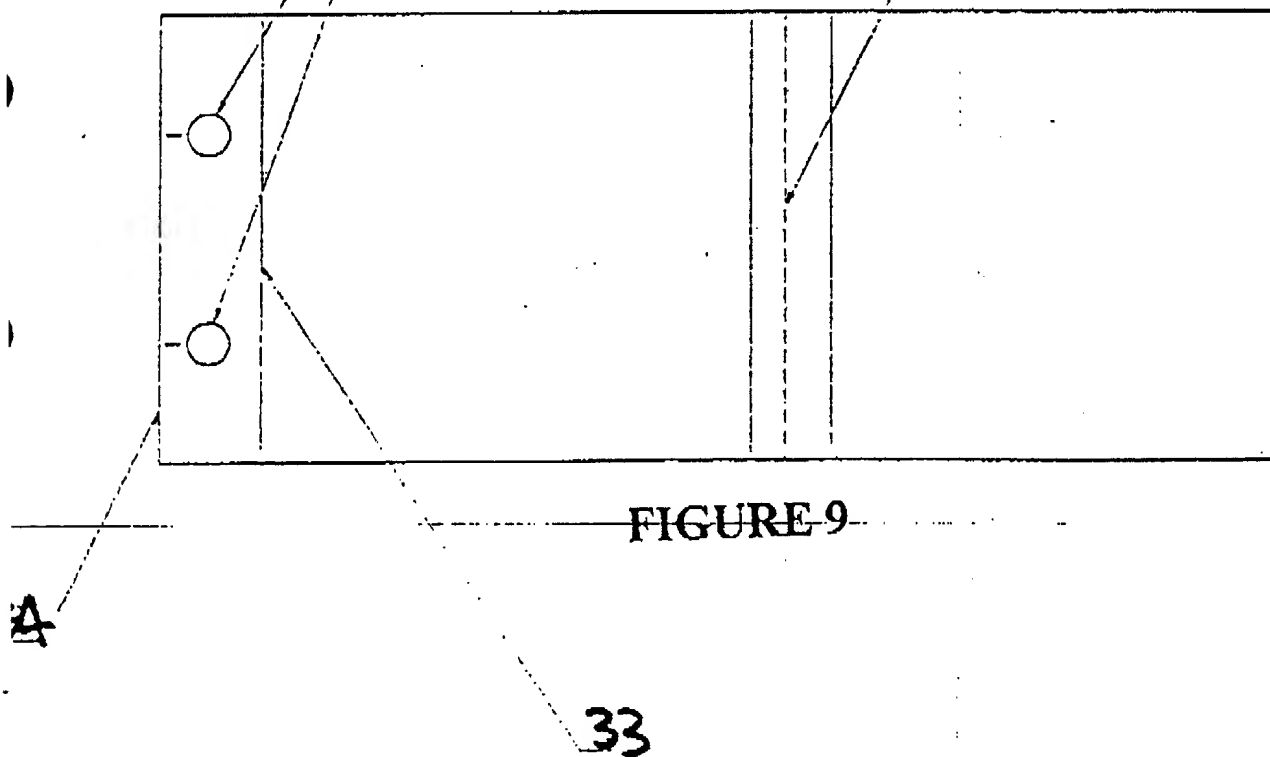


FIGURE 9

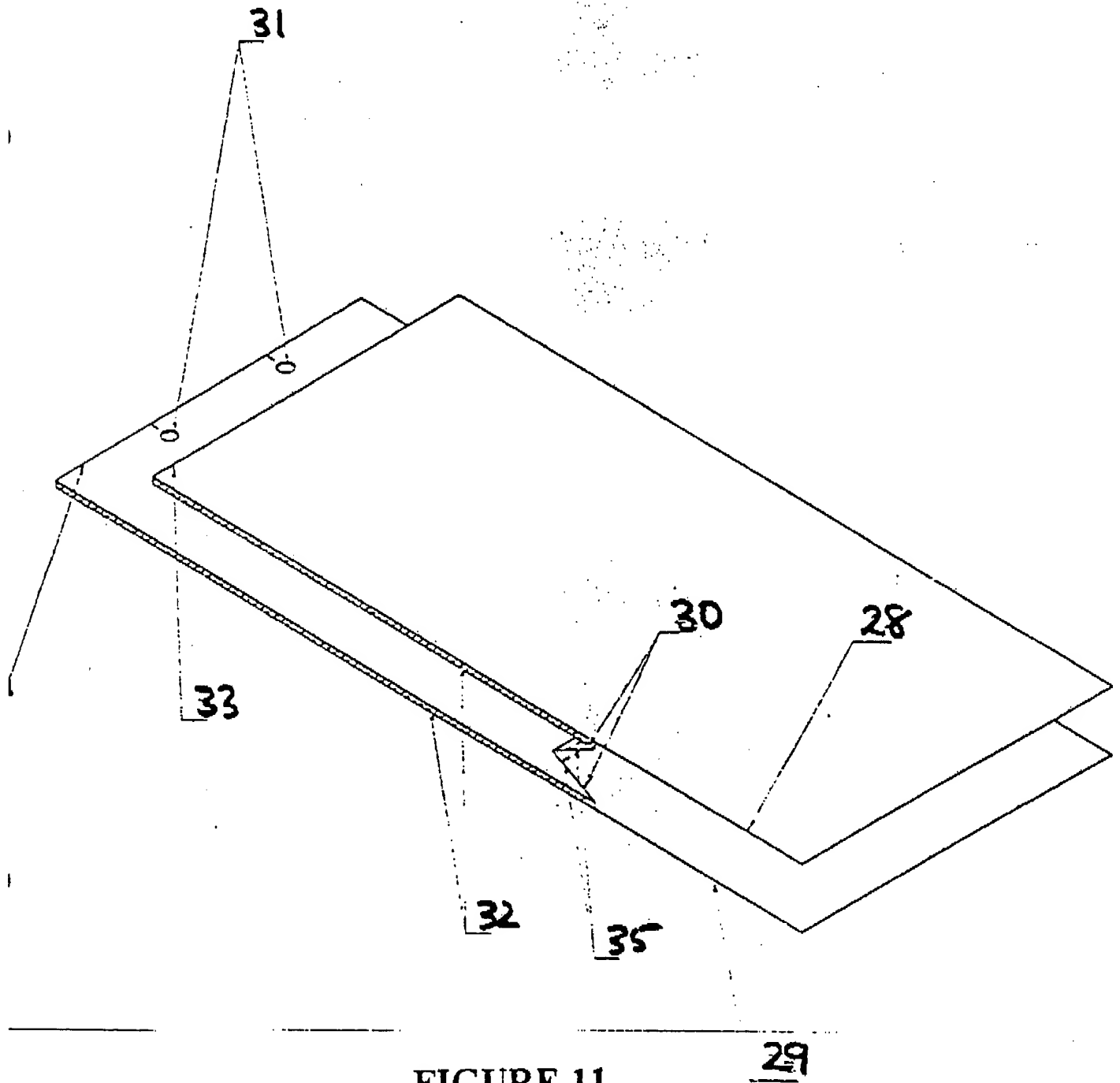


FIGURE 11

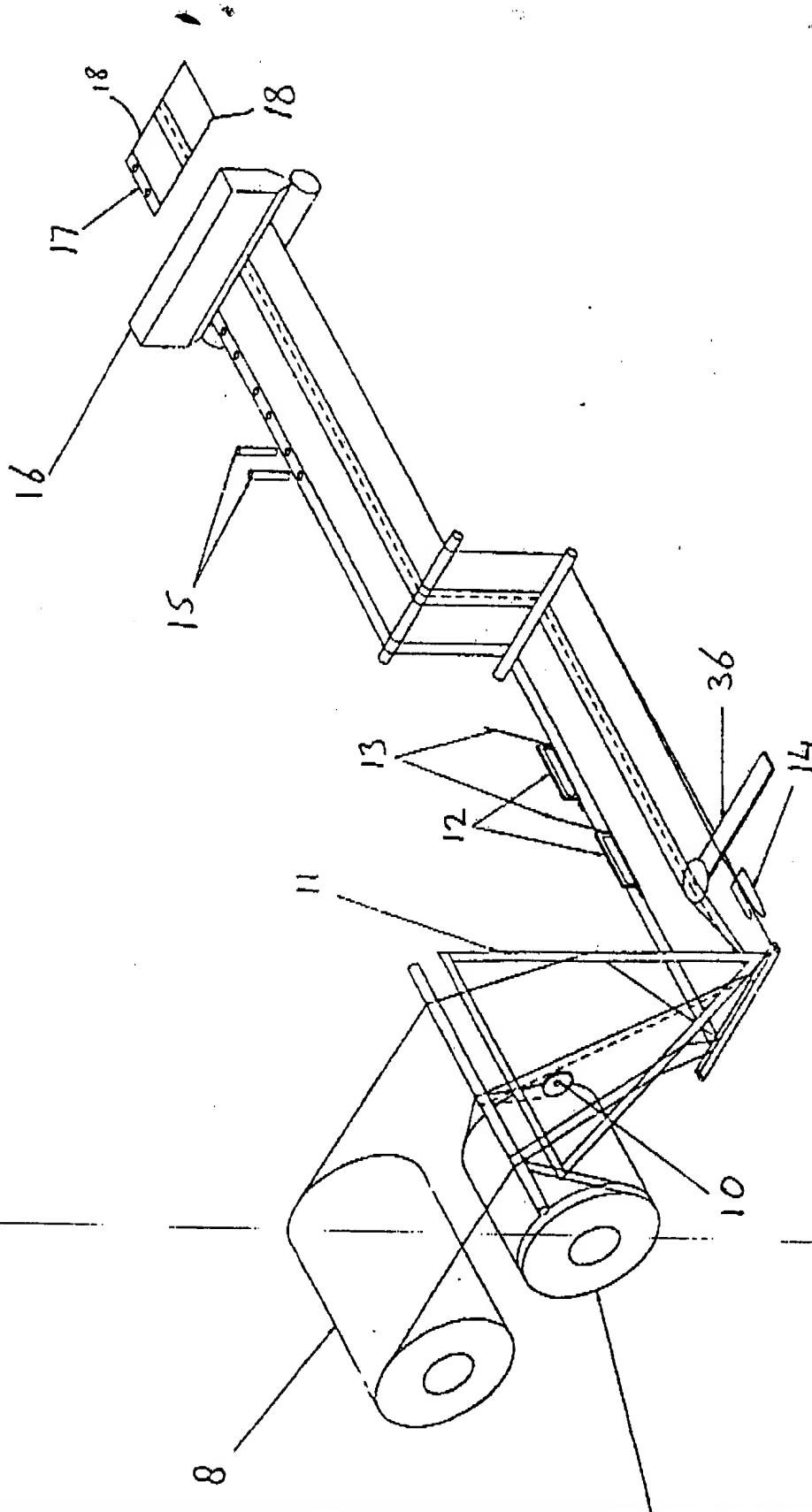


FIGURE 12